



AFCTN Test Report

94-123

AFCTB-ID
94-063



TMSS Parsing Test

**MIL-M-83495A, Appendix A,
General Equipment, Amendment
One**



Document Type Definition



MAXIMA Corporation

DISA Contract #DCA100-93-D-0065



Quick Short Test Report

24 May 1994



Prepared for
Electronic Systems Center
Air Force CALS Program Office
HQ ESC/AV-2
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Air Force CALS Test Bed

Notification of Test Results

24 May 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

MAXIMA Corporation

Identified as follows:

Title:	MIL-M-83495A Appendix A, General Equipment, Amendment One DTD Parsing Test
Program:	DISA
Program Office:	DISA
Contract No.:	DCA100-93-D-0065
QSTR No.:	AFCTB-ID 94-063

Received on the following media: **3.5" Diskette**

The results of the QSTR evaluation are as follows:

MIL-STD-1840A Media Format:	N/A
MIL-D-28000A IGES:	N/A
MIL-M-28001B SGML:	Fail
MIL-R-28002A Raster:	N/A
MIL-D-28003 CGM:	N/A

Formal results with associated disclaimer are documented and available from the AFCTB.

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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of this informal test is to analyze Air Force Document Type Definitions (DTDs) for Standard Generalized Markup Language (SGML) syntax, using several commercial and public domain SGML parsers, prior to placing them in the Defense Information Systems Agency (DISA) Asset Source for Software Engineering Technology (ASSET) repository.

2. Test Parameters

Test Plan: AFCTB 94-063

Date of Evaluation: 24 May 1994

Evaluator:

George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data Originator:

Kay Hill
MAXIMA Corporation
2372 Lakeview Drive
Beavercreek OH 45431
(513) 427-5888

Data Description:

Technical Manual Test
1 DTD

Data Source System:

Text/SGML
SOFTWARE
Unknown

Evaluation Tools Used:

MIL-M-28001 (SGML)
PC 486/50

Exoterica *XGMNormalizer v1.2e3.2*
Exoterica *Validator v2.2 exl*
McAfee & McAdam *Sema Mark-it v2.3*
Public Domain *sgmls 1.1*

Standards Tested: MIL-M-28001B

3. 1840A Analysis

3.1 External Packaging

The 3.5" diskette was hand delivered to the Air Force CALS Test Bed (AFCTB). It was not enclosed in any type of container.

The files received by the AFCTB were not MIL-STD-1840A. The files were not named per the standard conventions, as the stated purpose of the evaluation was the basic data structure.

4. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. The goal was to configure the DTD under analysis as it would normally be used. However, for this analysis it was necessary to modify the DTD adding the "DOCTYPE doc [" statement to the start and the companion "]>" to the end of the DTD under evaluation, as stated in the comments of the DTD. If the parser did not support a formal file pointing to the location of the ISO character sets, this was added.

The DTD under evaluation MIL-M-83495A, Appendix A, General Equipment, Amendment One, called for a companion MIL-M-38784C DTD. MIL-M-38784C, Amendment three DTD, delivered on the same diskette as the DTD to be evaluated, was used. This DTD was used without change except to insert the location of the ISO character set files. The DTD under evaluation referenced the General System DTD, D495ABO.A1. which was located within a marked section. This section was marked "ignore" and therefore was not called. See diagram below.

```
<!-- MIL-M-83495A General Equipment DTD -->
```

```
D495AA0.A1 —> D784CB0.A3
    ignore
        —> D495AB0.A1 —> D784CB0.A3
```

All parsers reported three errors/warnings for an element used but not defined.

The following notes apply to the parsing analysis as indicated in the ensuing paragraphs.

Note 1. Entity parameters defined more than once is a valid SGML construct. The duplicate definition errors and/or warnings in this analysis do not indicate any problems.

Note 2. The occurrences of warnings "references defined, but not used," appeared because portions of the called DTD, i.e., MIL-M38784C, were not used. They were not used because the entity definitions of the DTD under analysis altered the execution path in the called DTD. The warnings in this analysis do not indicate any problems.

4.1 Exoterica Validator

The DTD file was evaluated using the Exoterica Validator *ex1* parser. The basic DTD was modified by placing the concrete syntax file and "<!DOCTYPE doc [" at the start and the "]>" at the end. The parser reported 131 errors which related to the missing instance and are not considered errors for this analysis.

The parser reported 29 total warnings of three types. The first four warnings were parameter entity declared more than once. See Note 1 above.

```
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 37,
    used in "\xgml\9463.dtd", line 152:
A parameter entity name has been declared more than once.
The entity is "%shorttitleuse".
<!ENTITY % shorttitleuse "IGNORE" >
    ~~~~~
-->
```

Twenty-two warnings of a second type relate to elements defined but not used in any content model. See Note 2 above.

```
<!-- **Warning** in "\xgml\9463.dtd", line 344:  
    An element is not allowed in the document instance because it does not  
    appear in any accessible content model or it is completely excluded.  
    The element is "ADDRESS".  
-->
```

Three warnings of a third type were elements not defined. This warning indicates an error in the DTD syntax.

```
<!-- **Warning** in "\xgml\9463.dtd", line 344:  
    An element name specified in a USEMAP declaration, ATTLIST declaration or  
    content model is not defined by an ELEMENT declaration.  
    The element name is "SPECTOOLS".  
-->
```

4.2 Exoterica XGML Normalizer

The DTD file was parsed using the Exoterica *XGMLNormalizer* parser. The concrete syntax and "<!DOCTYPE doc [" were added to the start and "]>" to the end of the file. Three warnings were issued by this utility. All of these warnings relate to undeclared elements. This warning indicates an error in the DTD syntax.

```
C:\XGML\XGMLNORM.EXE --  
Warning on line 344 in file 9463.dtd:  
An undeclared element name was used in a content model.  
The element is 'SYSPEC'.
```

4.3 Public Domain sgmls

The DTD file was evaluated using the Public Domain *sgmls* parser version 1.1. The file was modified by adding the "<!DOCTYPE doc [" to the start and "]>" to the end of the file as stated in the comments in the DTD. The D784CB0.A3 files were used as the point to files. Seven warnings were reported by the parser. The first four warnings were duplicate specifications. See Note 1 above.

```
sgmls: In file included at \ws\9463.dtd, line 79:  
Warning at i:\dtd\784c.dtd, line 37 in declaration parameter 4:  
Duplicate specification occurred for "%shorttitleuse"; duplicate  
ignored.
```

The last three warnings were elements used but not defined. This warning indicates an error in the DTD syntax.

```
sgmls: Warning at \ws\9463.dtd, line 271 at record end:  
Element "THEORY" used in DTD but not defined
```

4.4 Sema Mark-it

The DTD file was evaluated using McAfee & McAdam's *Sema Mark-it* v2.3 parser. The file was modified by adding the concrete syntax and "<!DOCTYPE doc [" to the start and "]>" to the end of the file. Three warnings were issued by this program relating to elements used but not defined. This warning indicates an error in the DTD syntax.

```
<!--*** file:C:\XGML\9463.DTD line:209 pos:6255  
Warning: Element THEORY, used in the model of element GSCHAP,  
has not been declared in the DTD.-->
```

5. Conclusions and Recommendations

The file D495AA0.A1, MIL-M-83495A, Appendix A, General Equipment, Amendment One, does not conform to the SGML syntax of ISO Standard 8879, as required by the CALS MIL-M-28001B specification. This conclusion is derived from the parser test warnings which indicate elements are used that are not defined.

6. Appendix A - Detailed SGML Analysis

6.1 Exoterica Validator

```
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 37,
    used in "\xgml\9463.dtd", line 152:
A parameter entity name has been declared more than once.
The entity is "%shortitleuse".
<!ENTITY % shortitleuse "IGNORE" >
    ^^^^^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 45,
    used in "\xgml\9463.dtd", line 152:
A parameter entity name has been declared more than once.
The entity is "%shortitle".
<!ENTITY % shortitle " " >
    ^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 107,
    used in "\xgml\9463.dtd", line 152:
A parameter entity name has been declared more than once.
The entity is "%frnt".
<!ENTITY % frnt "(idinfo, warnpage?, chginssht?, lep, verstat?,
    ^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 165,
    used in "\xgml\9463.dtd", line 152:
A parameter entity name has been declared more than once.
The entity is "%bodyele".
<!ENTITY % bodyele "(chapter, chapter+, ddchapter?)" >
    ^^^^^^

-->
<!-- **Warning** in "\xgml\9463.dtd", line 344:
An element is not allowed in the document instance because it does not
appear in any accessible content model or it is completely excluded.
The element is "ADDRESS".
-->
```

<<<< PART OF MESSAGE TEXT REMOVED HERE >>>>

The element is "CHAPTER".
The element is "CHGINSSHT".
The element is "CHGLIST".
The element is "CHGREC".
The element is "DDCHAPTER".
The element is "DDDESC".

```
The element is "DDINDEX".  
The element is "DDINTRO".  
The element is "DDLIST".  
The element is "DDSHEET".  
The element is "DOC".  
The element is "DOCPART".  
The element is "GSCHAP".  
The element is "INSERTPG".  
The element is "INTRO".  
The element is "PGNO".  
The element is "PREFACE".  
The element is "REMOVEPG".  
The element is "SHORTTITLE".
```

-->

```
<!-- **Warning** in "\xgml\9463.dtd", line 344:  
An element name specified in a USEMAP declaration, ATTLIST declaration or  
content model is not defined by an ELEMENT declaration.  
The element name is "SPECTOOLS".
```

-->

```
<!-- **Warning** in "\xgml\9463.dtd", line 344:  
An element name specified in a USEMAP declaration, ATTLIST declaration or  
content model is not defined by an ELEMENT declaration.  
The element name is "SYSPEC".
```

-->

```
<!-- **Warning** in "\xgml\9463.dtd", line 344:  
An element name specified in a USEMAP declaration, ATTLIST declaration or  
content model is not defined by an ELEMENT declaration.  
The element name is "THEORY".
```

-->

```
The element is "VOLUME".  
The element is "WARNPAGE".
```

*<<<< ERRORS FROM THIS POINT ON RELATE TO NO DOCUMENT INSTANCE AND ARE NOT CONSIDERED
FOR THIS REPORT >>>>*

```
<!-- **Error** in "\xgml\9463.dtd", line 345:  
The document instance must consist of at least one tag or data character.  
The following element can start: "DOCGE".
```

-->

<<<< PART OF LOG FILE REMOVED HERE >>>>

```
<!-- **Error** in "\xgml\9463.dtd", line 345:  
An end tag that has been declared inomissible ("--") must not be omitted.  
The element is "DOCGE".
```

-->
<!-- Capacity points/limits:
TOTALCAP =135211/200000
ENTCAP =12800/200000
ENTCHCAP =11625/70000
ELEMCPA =6016/70000
GRPCAP =29056/70000
EXGRPCAP =1312/70000
EXNMCAP =2400/70000
ATTCPA =50880/200000
ATTCHCAP =1247/70000
AVGRPCAP =19616/70000
NOTCAP =96/70000
NOTCHCAP =163/70000
IDCAP =0/70000
IDREFCAP =0/70000
MAPCAP =0/70000
LKSETCAP =0/70000
LKNMCAP =0/70000

-->
<!-- 131 errors and 29 warnings reported. -->

6.2 Exoterica XGMLNormalizer Parser

```
C:\XGML\XGMLNORM.EXE --
Warning on line 344 in file 9463.dtd:
An undeclared element name was used in a content model.
The element is 'SYSPEC'.
```

```
C:\XGML\XGMLNORM.EXE --
Warning on line 344 in file 9463.dtd:
An undeclared element name was used in a content model.
The element is 'SPECTOOLS'.
```

```
C:\XGML\XGMLNORM.EXE --
Warning on line 344 in file 9463.dtd:
An undeclared element name was used in a content model.
The element is 'THEORY'.
```

6.3 Public Domain sgmls Log

```
sgmls: In file included at \ws\9463.dtd, line 79:
    Warning at i:\dtd\784c.dtd, line 37 in declaration parameter 4:
    Duplicate specification occurred for "%shorttitleuse"; duplicate ignored
sgmls: In file included at \ws\9463.dtd, line 79:
    Warning at i:\dtd\784c.dtd, line 45 in declaration parameter 4:
    Duplicate specification occurred for "%shorttitle"; duplicate ignored
sgmls: In file included at \ws\9463.dtd, line 79:
    Warning at i:\dtd\784c.dtd, line 109 in declaration parameter 4:
    Duplicate specification occurred for "%frnt"; duplicate ignored
sgmls: In file included at \ws\9463.dtd, line 79:
    Warning at i:\dtd\784c.dtd, line 165 in declaration parameter 4:
    Duplicate specification occurred for "%bodyele"; duplicate ignored
sgmls: Warning at \ws\9463.dtd, line 271 at record end:
    Element "THEORY" used in DTD but not defined
sgmls: Warning at \ws\9463.dtd, line 271 at record end:
    Element "SPECTOOLS" used in DTD but not defined
sgmls: Warning at \ws\9463.dtd, line 271 at record end:
    Element "SYSPEC" used in DTD but not defined
```

6.4 Sema Mark-it Log

```
<!--*** file:C:\XGML\9463.DTD line:209 pos:6255
Warning: Element THEORY, used in the model of element GSCHAP,
has not been declared in the DTD.-->

<!--*** file:C:\XGML\9463.DTD line:209 pos:6255
Warning: Element SPECTOOLS, used in the model of element GSCHAP,
has not been declared in the DTD.-->

<!--*** file:C:\XGML\9463.DTD line:209 pos:6255
Warning: Element SYSPEC, used in the model of element GSCHAP,
has not been declared in the DTD.-->
```